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10/091,010

03/06/2002

Yeun-Chol Chung

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01/26/2005

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EXAMINER

WANG, QUAN ZHEN

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/091,010

Applicant(s)

CHUNG ET AL.

Examin r

Quan-Zhen Wang

Art Unit

2633

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☐ Claim(s) 5-6 and 8-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Taga et al (U.S. Patent US 5,872,647).

Regarding claim 1, Taga teaches a transmitting device (fig. 1) comprises: a light source (fig. 1, LIGHT SOURCE 1) for generating the optical signals; an optical modulator (fig. 1, DATA MODULATOR 3) for modulating the optical signals generated by the light source; a pattern generator (inherent) (fig. 1, data signal d; column 2, lines 52-56) for activating the light modulator; a polarization scrambler (fig. 1, POLARIZATION SCRAMBLER 4) for scrambling the polarization of the optical signals which are output from the light modulator after modulation.

Regarding claim 2, Taga further teaches that the pattern generator (inherent) generates transmission data signals (fig. 1, data signal d; column 2, lines 52-56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2633

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taga et al. (U.S. Patent US 5,872,647) in view of Bodell (U.S. Patent US 4,768,186).

Regarding claim 3, Taga differs from the claimed invention in that Taga does not specifically teach that the pattern generator generates transmission data signals and high frequency pilot tone. However, it is well known in the art at the time the invention was made to generate transmission data signals and high frequency pilot tone for an optical communication system. For example, Bodell teaches to generate transmission data signals and high frequency pilot tone for optical communication system (fig. 3; column 4, lines 53-61). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a data signals and high frequency pilot tone generator, such as the one taught by Bodell, for the data signal generation in the transmission system of Taga in order to use the pilot signal to remotely monitor conditions of other transmission stations along the transmission line.

3. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ooi et al. (U.S. Patent Application Publication US 2002/0015207 A1) in view of Ishikawa et al. (U.S. Patent US 6,081,360).

Regarding claim 4, Ooi teaches a monitoring apparatus for monitoring the dispersion of optical signals in wavelength division multiplexing (WDM) optical networks (fig. 15), which comprises: an optical distributor (fig. 15, element 104) for distributing

Art Unit: 2633

input optical signals; a first light receiver (fig. 15, PIN-PD 58 on the right hand side) for photo-electrically converting the optical signals to measure the frequency band of the optical signals distributed by said distributor; a second light receiver (fig. 15, PIN-PD 58 on the left hand side) for photo-electrically converting the optical signals to measure the power of the optical signals distributed by said distributor; a filter (fig. 15, filter 60) for passing the output signals of said first light receiver only over the frequency band of interest for measuring; a power meter for measuring the signal power over the frequency band filtered by said filter (fig. 15, Power Sensor 62). Ooi differs from the claimed invention in that Ooi does not specifically teach to measure the average power of the optical signals by the second light receiver. However, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to remove the optical filter 108 on the left hand side and detect the average power of the optical signals by the second light receiver in order to monitor the total power of the optical signals transmitted.

Ooi further differs from the claimed invention in that Ooi does not specifically teach an analog-to-digital (A/D) converter for converting the analog signals from said first and second receivers into digital signals; and a microprocessor for measuring the average power of the optical signals by using the digital signals from said A/D converter and monitoring the polarization-mode dispersion and the chromatic dispersion using the power values measured by said power meter. However, it is well known in the art at the time when the invention was made to use an analog-to-digital (A/D) converter for converting the analog signals from optical receivers into digital signals; and a

Art Unit: 2633

microprocessor for processing the signal to generate desired information, such as polarization-mode dispersion and the chromatic dispersion. For example, Ishikawa teaches a dispersion controller (fig. 29, composition amount controller 46) comprising an analog-to-digital (A/D) converter (fig. 29, A/D 94) for converting the analog signals from a receiver into digital signals; and a microprocessor (fig. 29, MPU) to generate information on dispersion (column 12, lines 63-67 and column 13, lines 1-12).

Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate an analog-to-digital (A/D) converter and a microprocessor, as it is taught by Ishikawa, into the monitoring unit taught by Ooi in order to precisely measure the dispersion of the optical signals.

Regarding claim 7, Ooi further teaches that the distributor is an optical coupler (fig. 15, coupler 104).

Allowable Subject Matter

4. Claims 5-6 and 8-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is an examiner's statement of reasons for allowance:

Regarding claims 5-6 and 8-9, although Ooi et al. and Ishikawa are generally directed to monitoring dispersion and providing dispersion compensation in a WDM system, the prior art does not specifically disclose or suggest the particular dispersion

Art Unit: 2633

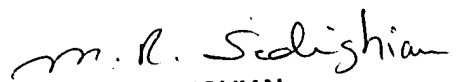
monitoring criteria and the particular combinations of limitations and elements recited by claims 5-6 and 8-9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. R. SEDIGHIAN
PRIMARY EXAMINER